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BUREAU OF PLANT INDUSTRY

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REPORT FOR THE MONTH OF NOVEMBER, 1936.

HAVRE:

Precipitation during November totaled only 0.12 inch, as compared with a 55-year mean of 0.60 inch, increasing the rainfall from January 1 to 6.44 inches, or roughly 50 percent of the normal. Only one storm period occurred, lasting from November 4 to 7, accompanied by light snowfall and several cold days, culminating in a minimum of -19° on the 6th. After this storm, partly cloudy skies and mild, dry weather prevailed. A maximum of 73° on November 19 was the highest temperature ever reported here so late in the season. The mean temperature was 33.1°, a departure of 3.4°. The average wind velocity of 9.7 miles per hour established a new high record for the month. Shortage of water in streams and diminishing flows in many wells are causing alarm in certain localities.

Winter wheat and winter rye have now partially emerged, however, stands appear rather uneven. Raking and burning of weeds in the experimental fields and in other places were completed during the month.

The station cattle herd was brought down from the mountain lease about November 1; a number of calves, steers, and off-type cows being disposed of shortly thereafter. The remainder of the herd has been pastured on bottom land since that time, winter feeding experiments not yet having been started.

A WPA crew was engaged during the month tearing down some old buildings and remodeling a dwelling house. It is anticipated that road work, clearing of bottom land for alfalfa, and other jobs will occupy the attention of this group throughout the winter months.

Station visitors included A. H. Walker of the Animal Husbandry Department at Bozeman, and a party from the Dominion Experimental Station at Lethbridge, Alberta, headed by Dr. W. H. Fairfield, Superintendent.

Maximum temperature, 73°; minimum, -19°; precipitation, 0.12 inch.

JUDITH BASIN:

Snow falling the first days of the month accumulated to the depth of about 4 inches in stubble fields. This melted during the second week and soaked into the ground, leaving fallow fields in condition to blow after they dried. Near the end of the month hard winds started soil blowing. Fields that had been worked excessively with the oneway suffered the most drifting. Winter wheat fields were not injured permanently, but the leaves were cut off and drifted under, so that the fields subject to drifting presented a black appearance. Additional moisture would be a decided benefit to all fall seeded and perennial crops.

HUNTLEY:

Climatic conditions during the first week of the month were somewhat severe with snow, winds and sub-zero temperatures. The latter part of the month, however, has been comparatively mild with bright, clear days, some of which have been quite warm, and very little precipitation.

Fall-sown grains, which at the end of October did not look very thrifty, now appear to have recovered from their droughty condition and seem to be about normal in color and stage of growth for this date. Much late-sown grain and volunteer material including weeds has come up since the November precipitation was received. Crested wheatgrass continues to make some growth and would supply considerable pasturage on the older plots.

Farm work has consisted of threshing alfalfa seed, raking and burning weeds, seeding crested wheatgrass, and duckfoot cultivating all roadways and large fallow strips where soil blowing might occur.

Maximum temperature, 68°; minimum, -10°; precipitation, 0.15 inch.

SHERIDAN:

The month opened cold and stormy, with temperatures considerably below the seasonal average and with frequent light snow for the first 8 days. The remainder of the month was mild and pleasant with temperatures considerably above the average for the season, until the last day, which was somewhat colder with a trace of snow.

High winds prevailed on a few days, with considerable blowing of light soil in exposed locations on the 24th and 25th. Wind movement for the entire month was somewhat above the average of November for this section. Considerable drying on the surface took place the latter part of the month, but moisture conditions below the surface still remain good to a depth of from 6 to 8 inches. Precipitation was less than one third the station average for November.

A considerable amount of plowing was done during the month in this section. Some was done on the station from the 19th to the 24th, the surface being generally too wet for plowing until that time where it was desired to plow. More seeding of crested wheatgrass was done on the 19th and 20th. Winter wheat sown the last of October germinated, but did not emerge. Native grass and crested wheatgrass remained green generally but made little growth.

Maximum temperature, 70°; minimum, 0°; precipitation, 0.24 inch.

DICKINSON:

Light snow the first week of November was accompanied by a cold spell with a minimum temperature of 5° below zero. Mild weather followed, and all the snow was gone from the fields by the 10th, leaving the ground bare the rest of the month.

Several windy days caused soil blowing on exposed fields, the most damage resulting on the 20th when the air was filled with dust most of the day, visibility being only a quarter of a mile during the worst periods. A nearby corn field and a field of summer fallow in the vicinity, which had received too much cultivation during the season, blew badly. Other corn fields which had received no cultivation since planting did not blow. The mild weather was favorable for livestock, most of which now has to be fed.

Winter wheat and winter rye in spots where the soil was wet by the snow had germinated during the month. Only an occasional seedling emerged. Crested wheatgrass seeded on the station on October 16 and on November 13 has not germinated. Some fall seeding of grasses was done in the county under the range program. The soil is so dry that this seed will not germinate even if warm weather follows.

O. W. Roberts, Meteorologist, Weather Bureau, Bismarck, N. Dak., visited the station November 16.

Maximum temperature, 65°; minimum, -5°; precipitation, 0.49 inch.

MANDAN:

The month of November was mild and pleasant for the most part. The month opened with cold weather and several days of stormy weather. Snow, amounting to 6 inches fell during the first week, and roads were badly drifted in places for a day or two. The snow was practically all melted by the middle of the month. The moisture all went into the soil.

The total precipitation for the month was 0.61 inch, which is near normal.

There were two days of very high wind, which caused soil blowing on the station. The first day of high wind was on the 20th. The wind averaged 30 miles per hour in the forenoon, and 35 miles between 1 and 2 p.m. After this time it began to subside. The air was filled with soil, and it seemed like the worst dust storm ever noted here. The wind was the highest recalled. The second day of high wind was on the 24th. The wind came up in the night, was blowing its hardest in the morning, and blew out before noon. It covered 35 miles between 7 and 8 a.m. The air was again filled with dust, and soil blowing was serious in some fields.

Maximum temperature, 64°; minimum, -3°; precipitation, 0.61 inch.

The total precipitation for the year to date is 6.19 inches. December precipitation will need to be about four times normal in order to equal or exceed the low total of 8.13 inches in 1934.

The year of 1936 shattered all climatic records, except for high rainfall. All crop records were also broken. It is the first time in the 24 years of the Station that some of the field crops did not produce at least some measurable yield. It used to be thought that corn could be depended upon to produce some feed, but it was so poor this year that practically no feed was produced. On many of the corn plots only a few plants came up. The corn that did not grow in the spring came up after the rain in September. Small grains were a complete failure. Some of the plots were harvested but did not thresh out enough grain to make a yield. Oats was practically all hulls, there was little or nothing in them.

Native vegetation made the least growth of record. It never got a proper start in the spring. Practically all the grazing was furnished by the growth of 1935, but in nearly all cases this gave out before the end of the season. It was necessary to ship the steers at the end of August because of the shortage of pasture.

BELLE FOURCHE:

The first week of November was cold and stormy, but mild, dry weather prevailed thereafter, and the mean temperature for the month was 3° above normal. Approximately 5.5 inches snow, measuring 0.42 inch precipitation, were received October 31 and November 1, but a high wind on November 2 removed nearly all of the snow from cultivated fields. An additional 0.25 inch precipitation was received in light snows on November 4 and 6, but only a trace was recorded during the remainder of the month.

High winds prevailed almost continuously from November 20 to 28, and extensive drifting of soil took place. On November 22, the average velocity of the wind 2 feet above the ground was 32 miles per hour from 8:00 a.m. to 4:30 p.m., and 40.7 miles per hour from 1:30 p.m. to 4:30 p.m. The wind became much stronger about 3:30 p.m., and for an hour or more the velocity apparently was about 50 miles per hour. Soil blowing was the most severe and widespread ever observed in this locality. Heavily overgrazed native sod land blew rather badly, and there was some blowing of grain stubble land. A small amount of soil blowing occurred on winter grain plots in the rotation field, and a few fall plowed and grain stubble plots were covered with wind blown soil from an adjoining field. Some of the fallow and corn stubble land was reduced to a dangerous condition, necessitating reduckfooting.

Snow and the freezing of the ground during the cold weather delayed completion of fall plowing and soil sampling until about the middle of the month. Other field work consisted chiefly of duckfooting or listing plots, roads, and alleyways to control soil blowing. Potatoes were harvested, but the yields were too small to be of practical value. Grass was reseeded on the various wheat stubble and sod plots.

Winter wheat and winter rye are well germinated, and volunteer small grain is beginning to emerge. Some new growth has appeared on native sod and cultivated grass pastures.

Maximum temperature, 68°; minimum, 5°; precipitation, 0.54 inch.

NORTH PLATTE:

The weather for the month was mostly clear with moderate temperatures. On November 2 the only precipitation for the month fell in the form of snow. The accumulated deficiency of precipitation since Januarylis 7.05 inches. High winds on a few days during the last week of the month brought severe dust storms.

There is very little winter wheat showing on the D.L.A. plots, and reseeding to spring wheat in the spring probably will be necessary. Several good fields of early seeded wheat are reported in the panhandle of Nebraska. The corn in the variety plots was harvested early this month, and the yields will be recorded as failures. Most of the month was spent in tabulating data and making records and reports.

Maximum temperature, 67°; minimum, 6°; precipitation, 0.03 inch.

AKRON:

The first week of November was foggy, a continuation of the unfavorable weather for field work which prevailed during October. The last week was very windy, again unfavorable for most types of field work.

The threshing of the remaining projects was completed during the favorable weather that prevailed during the middle of the month. The grain sorghums were threshed first, followed by the beans. Rotation kafir plots averaged 12.5 bushels per acre as against a corn yield of about 4 bushels per acre. Beans averaged about 4 bushels per acre. Late fall cultural work on the rotation plots was accomplished about the 9th, very near the established average date for that work.

Air became hazy when moderately high northwest winds prevailed on November 20, 22, and 24. Whether this was blow-in dust or that from the more sandy corn lands to the northwest of the station is not known. There was a dearth of weed growth in corn this year, but the sandy land farmers usually let a few remain, which undoubtedly help in soil blowing control.

Maximum temperature, 70°; minimum, 3°; precipitation, 0.07 inch.

COLBY:

November was dry and pleasant most of the time, with the temperature averaging slightly below normal. There was no extremely cold weather. On eight days, however, it was windy and dusty with more or less soil blowing. The soil is very ashy on top and blows readily.

A minimum of 8° on the 3rd froze the tips of the wheat plant so that they turned brown and dropped off. The wheat has not made much growth since. It does not appear to have much more growth than at the beginning of the month. Only an occasional field in the east half of the county where the September rains were heavier shows green when looking across the drill ridges. At the station, the wheat does not show out of the drill furrows. It appears to be in a healthy but not vigorous condition.

The sorghums were hauled in during the month. The plots yielded from almost nothing to almost a half ton of stover to the acre. There was no grain.

The straw and manure as top dressings for winter wheat were applied on the 18th.

The plots which were fallow this year and which were not seeded to winter wheat this fall were ridged with a furrow drill to check soil blowing. A lister furrow was run through all the alleys and on the edges of the roadways as a precaution against blowing. All the bare fields on the station have been listed solid or strip listed.

Maximum temperature, 71°; minimum, 8°; precipitation, 0.02 inch; snow, 0.20 inch. Precipitation, January - November, 1936, 10.49 inches; 49-year average, 16.97 inches.

GARDEN CITY:

Field work on the dry land project was completed during the month. Late fall listing was done on the 14th and late fall plowing on the 16th. Moisture immediately below the surface was sufficient to put the soil in good condition for working, and both lister and plow did good work. Fall listing on the State project was done with a lister equipped with damming attachments which placed substantial dams about every 10 feet in the furrow. Some areas were listed on the contour, but regular plot areas were listed straight with field boundries regardless of slope. Slope was not excessive in any case, however.

Soil moisture samples were taken on M.C. wheat plots on the 23rd. Available moisture is very limited, and wheat has made very little growth during the month. A short trip to the south of Garden City on Thanksgiving Day revealed the fact that there is considerable good wheat in the south part of this county, as well as in Haskell and Seward Counties to the south. Wheat is fair to good over most of this county but is needing moisture badly, especially in the northeast section where fall rains were even lighter than elsewhere in the county.

Sorghum crops produced on dry land rotation and tillage plots were hauled in and weighed about the middle of the month. No grain was produced by kafir in ordinary 44-inch rows, even on fallow, and only a small amount where the crop was planted in rows spaced 88 inches apart. Yields of forage were also very low in all cases. Milo produced some grain on fallow and in wide spaced row plantings, but yields were exceedingly low. Threshing has been completed, but data have not all been assembled.

November was without precipitation except for a trace on the 2nd and 0.02 of an inch in the form of snow on the night of the 30th. Normal precipitation for November, as based upon an average of 28 years is 0.74 inch. Precipitation for the period January - November, 1936, was 12.37 inches, as compared with an average of 17.40 inches.

Temperatures for the month have been above normal, and fine weather has prevailed except for a few days of rather high wind velocity. Considerable dust was experienced on two or three days when wind velocities were high. That is, perhaps, an indication of what may be expected next spring, unless moisture conditions improve considerably before that time.

Maximum temperature, 75°; minimum, 12°; precipitation, 0.02 inch.

Mr. Haas left the station early in November to assist in the Washington office for a few months.

HAYS:

The weather was dry and generally mild without any extremes in temperature. It was too cool for much wheat growth, resulting in limited pasture in this locality. The wheat, however, has made sufficient growth to become well established and is generally in good condition and can carry on for sometime if necessary without more moisture. The fact that only a small amount of growth has been made helps to make the soil moisture, limited to the first foot, go farther.

Maximum temperature, 73°; minimum, 13°; mean, 42°; precipitation, trace.

TUCUMCARI:

No precipitation was received the past month. Only 0.20 inch fell in October, so very promising wheat fields on the plains are rapidly deteriorating. The total of 12.50 inches precipitation in 1936 to date was so poorly distributed that station yields were in most instances less than one-half normal. Practically the same precipitation in 1935 produced better than normal crops.

The first ten days of November were unusually cold, with a mean temperature of 40°. The mean for the entire month was 44°, slightly below normal. The lowest recorded was 13° on the morning of November 3.

Harvest of a very light grain crop and perhaps two-thirds of a normal fodder yield was completed under very favorable conditions. With greatly reduced livestock numbers and a surprisingly good growth of range grass, it is probable cattle in this locality can be carried through the winter without undue hardship.

Crews under the direction of officials of the Reclamation Service are now making preliminary surveys in the immediate vicinity of Tucumcari to determine what tracts of land can be irrigated from the Conchas dam if it is decided to organize a Conservancy District.

DALHART:

With the exception of a light snow which started near midnight of the last day of the month, no moisture was received during the month. Wind movement was near normal for the month; on only one day did soil blowing become severe, although soil movement occurred on two or three other days. Temperatures were likewise near normal, with the mean temperature 7° below normal.

Winter wheat and rye seeded in dry soil the last day of October have remained in dry soil unsprouted. Where unprotected these crops, where seeded early and emerged, have had the surface leaves either removed by rabbits or have dried out. On account of the extremely dry soil due to the lowest fall (July - November) precipitation ever received there was an absence of any succulent feeds. It was noticed when weighing sorghum stover that some of the sorghum stubs, notably Leoti Red sorgo, were completely eaten into the ground by rabbits. Where these succulent stubs appear the rabbits have so trampled the plots that the ground has the appearance of flocks of sheep being driven across. Another striking indication of the dryness of the fall is given by the Russian thistle plants which are extremely brittle.

Threshing was completed early in the month and stover was weighed. Yields were failures or near failures in all cases. Milo rotation plots averaged 2.0 bushels per acre, and kafir rotation plots averaged 3.1 bushels per acre. The outstanding feature of the yields was the fact that the quality of the grain was excellent. The few early or marginal heads were of fair size, and the grain matured normally. There were no heads partially mature or with undeveloped grain, as is usual during or following a period of prolonged drought.

Maximum temperature, 73°; minimum, 16°; precipitation, 0.02 inch.

BIG SPRING:

The growing season was suddenly ended by a killing frost November 4, which was about a week earlier than normal. This was the first cold spell of the season, and as the temperature dropped to 25°, it definitely established the killing frost date for this fall. A large acreage of late hegari and Sumac, which needed two or three more weeks, was caught in a rather immature stage. This will furnish lots of roughage, but it will not carry any grain and will not be of first class quality.

As a result of the early freeze, cotton picking, or rather pulling, will be completed considerably earlier than in many years past. Station cotton picking was completed on November 14, which is unusually early. It is probable that all cotton in the county will have been ginned before the first of the year.

Good rains during September and October have caused wheat pastures to be exceptionally good this fall, and they are proving a big help to farmers who are short of roughage.

Station work has consisted of harvesting all row crops left standing at frost time, picking cotton, and threshing sorghums from experimental plots. With the exception of bagged seed and other seed saved for planting purpose, all threshing was completed before December 1.

Forty head of high grade Hereford steer calves were received November 5 for use in the cattle feeding experiments this winter.

Dr. Ware of the Cotton Division, Bureau of Plant Industry, and J. M. Jones of Animal Husbandry Division of the Texas Station, visited the Station during the month.

Maximum temperature, 79°; minimum, 25°; precipitation, 0.58 inch.

LAWTON:

Mostly clear, open, dry weather throughout November was favorable to the prosecution of field work and to the carrying of livestock with a minimum amount of feed. However, slightly subnormal temperatures and a monthly precipitation of 0.13 inch prevented much growth of small grains. Volunteer crops of oats and wheat and early seedings of such crops sapped the soil moisture rapidly, and they were needing additional rain by the middle of November. The lack of moisture under temperatures that were too cool to encourage much growth curtailed the fall pasture possibilities very sharply. Most fields that were used for such purposes were also overstocked. Average to late seedings of wheat, oats, and barley have not furnished much grazing to date.

Fall plowing of rotation plots was completed November 13. Disking, listing, and plowing of increase fields, some of which will be used for spring seeding of oats, were completed before Thanksgiving. Such tillage operations were performed in more than the usual satisfactory manner.

Cotton picking on the station was completed November 4. The last remanents of cotton on the surrounding farms are coming to the gins, which expect to close for the season about December 10.

The yearly precipitation of 20.65 inches to date is 8.6 inches below normal.

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